

ONE-WAY MACHINE LANGUAGE TRANSLATION SYSTEMS

DEMONSTRATION AND ASSESSMENT REPORT

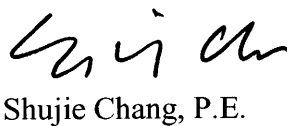


LIMITED USER EVALUATION

***Camp Pendleton, California
13-15 January 2004***

This document describes the One-Way Machine Language Translation limited user evaluation conducted at Camp Pendleton, California from 13-15 January 2004. It reflects our observations, conclusions, and recommendations. It does not necessarily represent the formal position of the Marine Corps or the Department of Navy.

This report is for official use only and may not be released outside the Department of Defense without prior approval from the Marine Corps Forces, Pacific Experimentation Center (MEC).



Shujie Chang, P.E.
Director, MEC

Contents

<u>1.0</u>	<u>BACKGROUND.....</u>	<u>5</u>
<u>2.0</u>	<u>PROBLEM STATEMENT/OPERATIONAL NEED.....</u>	<u>5</u>
<u>3.0</u>	<u>GOALS AND OBJECTIVES FOR I MEF LT ASSESSMENT.....</u>	<u>6</u>
<u>4.0</u>	<u>THE LANGUAGE TRANSLATION TECHNOLOGIES.....</u>	<u>6</u>
<u>5.0</u>	<u>ASSESSMENT EXECUTION.....</u>	<u>7</u>
5.1	GENERAL:	7
5.2	TRAINING.....	8
5.3	SCENARIO EXECUTION	8
<u>6.0</u>	<u>ASSESSMENT RESULTS.....</u>	<u>8</u>
6.1	GENERAL OBSERVATIONS.	8
6.2	FUNCTIONAL OBSERVATIONS.....	8-12
<u>7.0</u>	<u>CONCLUSIONS.....</u>	<u>14</u>
<u>APPENDIX 1: TRAINING FEEDBACK QUESTIONNAIRE</u>		<u>14-15</u>
<u>APPENDIX 2: CHECKPOINT SCENARIO</u>		<u>17</u>
<u>APPENDIX 3 : PHRASEALATOR QUESTIONNAIRE.....</u>		<u>19</u>
<u>APPENDIX 4 : VOICE RESPONSE TRANSLATOR QUESTIONNAIRE</u>		<u>24</u>
<u>APPENDIX 5 : INTERPRETE COMMUNICATOR QUESTIONNAIRE.....</u>		<u>29</u>

<u>APPENDIX 6 : DEMOGRAPHIC QUESTIONNAIRE</u>	<u>34</u>
--	------------------

1.0 BACKGROUND

The U.S. Marine Corps Forces, Pacific Experimentation Center (MEC) conducted a Machine Language Translation Users Workshop on 17-19 November 2003. During the course of this workshop it was recognized by all participants that the Workshop had created an opportunity to integrate all elements of USMC language translation community to address OIF I capability gaps and seek to fill selective gaps within the next 60 days.

As a result, a I MEF emergent requirements breakout group with near-term enabling capabilities as its main focus of effort was created. This breakout group was tasked to identify gaps that could potentially be closed within the next 60 days, develop OPRs, and timeline to complete the actions. As a result of input from this breakout group, and other supporting discussions, it was agreed to conduct a limited user assessment (LUE) of existing machine language translation technologies that had the potential to fill an identified capability gap within the next 60 days..

After further coordination, it was decided that three specific technologies potentially had the system maturity to satisfy requirements within the 60 day time frame. These candidate systems were the Phraselator by VoxTec, the Voice Response Translator (VRT) by IWT, and the Interpret/Communicator by SpeechGear. Additionally, it was decided to conduct the LUE from 12-15 January 2004.

2.0 PROBLEM STATEMENT/OPERATIONAL NEED

The United States (US) Combatant Commands, Intelligence Community (IC), and Coalition partner nations conduct worldwide operations with widely diverse languages, often with insufficient numbers of language qualified analysts and translators to support existing mission requirements. Communications with our coalition partners and the local population is usually a primary issue.

On the operational side, our ability to coordinate with partner countries and the local government is often hampered by language difficulties that are made more difficult by military jargon.

The US Military also finds itself more and more in coalition task forces and exercises. Major issues include the high volume of material to be analyzed, the diversity of languages encountered, the need for greater efficiency, speed in the analysis, and the limited numbers of language professionals.

Similarly, in the intelligence gathering function where trained linguists do exist, we face operations routinely with insufficient numbers of language qualified analysts and translators to support mission requirements. In this area of intelligence support, major issues include the high volume of material to be analyzed, the diversity of languages

encountered, the need for greater efficiency, speed in analysis, and the limited number of language professionals.

3.0 GOALS AND OBJECTIVES FOR I MEF LT LIMITED USER EVALUATION (LUE)

To demonstrate technologies and concepts to reduce language barriers experienced by operational and intelligence personnel. The thrust is to improve interoperability, accuracy and timeliness of translation for speech. Specific demonstration objectives include the following:

- Reduce the foreign language barriers across the full spectrum of transnational and coalition operational areas including personnel administration, medical, legal, political, intelligence, operations, logistics, plans, and C4I
- Extend and improve language translations technologies to accommodate the jargon and lexicon of military endeavors (military speak)
- Expedite the planning, coordination, and execution of military operations by coalition forces down to the service component headquarters of each country
- Expedite access to foreign sources and accelerate processing of foreign language material
- Integrate language translation and other language processing tools into Intelligence Community (IC) activities, the full spectrum of coalition military activities, including planning, operations, logistics, C4I, evidence gathering and processing, and tactical/strategic warfare efforts
- Develop and demonstrate tools to improve foreign language learning and sustainment of language skills

The above objectives form the basis for the assessment/evaluation criteria.

4.0 THE LANGUAGE TRANSLATION TECHNOLOGIES

Phraselator System Description.

- One way phrase based speech to speech machine translator
- Input phrase is linked to a pre-recorded output phrase and played through a speaker.
- User can provide information, give orders or directions, and ask simple questions in another language
- Speaker independent (any user without voice enrollment)
- Touch screen option to play phrases



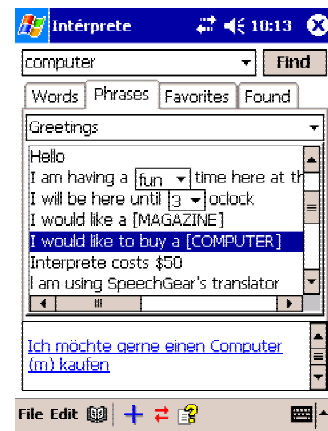
Voice Response Translator (VRT) System Description.

- One way phrase based speech to speech machine translator
- Speaker dependant (requires speaker to enroll voice)
- Input phrase is linked to a prerecorded output phrase and played through a speaker.
- Holds approximately 1000 15 word phrases.
- A unique voice recognition algorithm can recognize a user's voice with near 100 percent accuracy even in relatively high background noise environments.
- No touch screen option to play phrases
- Allows for hands free, eye free operation
- Each device can recognize up to 8 different users.



Interprete/Communicator System Description.

- PDA/Laptop based system
- Combines the information of a traditional paper translation dictionary with speech recognition and voice synthesis technology.
- Bi-directional database, hundreds of thousands of words and phrases.
- Phase Builder™ feature.
- Entire translation dictionary into your PDA.
- User-configurable features.
- Variety of voices to select speech synthesis.



5.0 ASSESSMENT EXECUTION

5.1 General:

This assessment was conducted over a two day period in a classroom and breakout room environment. On day one, training was conducted on each technology in a 'round-robin' fashion. Students from IMEF CE and 1st Marine Division attended the day one training. On day two, each student was required to use each technology while executing a scenario. Twenty-One students; all of whom had completed the day one training, were (NOTE: 5.1 number of students appear inconsistent w/ 5.2) present for the day two evolution. Of the 21 day two students, 5 were linguists or were proficient in a second language. These languages were Spanish, Portuguese, and Laotian. None of the students had any previous experience with machine language translation devices.

5.2 Training

Training began @ 0830 on day one. The 23 students were broken up into three groups of 8 students. Each instructor was allowed two hours to cover the material necessary for each student to be capable of operating the device. Each instructor utilized presentation material and hands-on activities. Training feedback forms were provided to each student at the conclusion of each training evolution. A Sample training Feedback form is provided as Appendix 1.

5.3 Scenario Execution

On day two each student was provided a printed copy of the scenario that they would be tasked with executing. The scenario is provided as Appendix 2. Each student was provided time to re-familiarize themselves with the device (s) and to prepare questions based on the scenario provided. Each student would execute the same scenario three times, once with each of the three technologies. When ready, each student was singularly brought into a separate room where either an Arab or Spanish speaker was present as the 'role player'. (The Interpret/Communicator device did not yet have Arab translations loaded so Spanish was used). A Data collector/controller was also present in each room.

After finishing the scenario, each student was provided a device specific feedback form to be filled out. Appendices 3, 4, and 5 are sample forms used for each device.

Additionally, each student was provided the opportunity to re-evaluate their training feedback based on actual usage, and each student completed a demographic questionnaire, provided as Appendix 6. This demographic questionnaire additionally provided four separate scenarios and asked each student to rank the device they would prefer to use if they were in that scenario.

6.0 ASSESSMENT RESULTS

6.1 General Observations.

- Students liked the hands-free nature of the VRT, and wanted a hands-free feature for the other devices.
- Students liked the ruggedness of the VRT and recommended the other devices be ruggedized.
- The Interpret/Communicator was generally viewed as the most reliable but the least durable.
- The Phraselator was considered the most durable.
- The VRT's phrases were considered more understandable by the average Iraqi.
- The Phraselator was considered a more "academic" or "intellectual" translation.

6.2 Functional Observations

6.2.1 Training: The training evolution was generally well received by the students. The results from student feedback, by device, are provided below.

Phraselator

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. After the training, I felt I understood how to use the device.			7	16
2. Were the features adequately described during training.			7	16
3. The training was logical and organized.			8	15
4. The level of detail was appropriate.			9	14
5. Training was the appropriate length.		1	15	7
6. Sufficient examples were covered during training.			9	14
7. Hands-on activities during the training were helpful.			5	18
8. The training aids (e.g., handouts, slides) were helpful.		2	9	12
9. Questions were addressed to my satisfaction.			7	16

VRT

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. After the training, I felt I understood how to use the device.		3	11	8
2. Were the features adequately described during training.		2	15	5
3. The training was logical and organized.		2	12	8
4. The level of detail was appropriate.		2	14	5
5. Training was the appropriate length.		3	15	4
6. Sufficient examples were covered during training.		2	15	5
7. Hands-on activities during the training were helpful.			10	12
8. The training aids (e.g., handouts, slides) were helpful.	1	1	14	6
9. Questions were addressed to my satisfaction.			17	5

Inteprete/Communicator

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. After the training, I felt I understood how to use the device.			14	7
2. Were the features adequately described during training.		1	12	8
3. The training was logical and organized.		1	14	6
4. The level of detail was appropriate.			13	8
5. Training was the appropriate length.		4	12	5
6. Sufficient examples were covered during training.			14	7
7. Hands-on activities during the training were helpful.			11	10
8. The training aids (e.g., handouts, slides) were helpful.		1	9	11
9. Questions were addressed to my satisfaction.			13	8

6.2.2 Scenario Execution: As previously stated, each student was asked to use each device to execute the same scenario. The results from student feedback, by device, are provided below.

Phraselator: Of the 18 responses submitted, the following results are summarized:

- Usefulness: 10 High 7 Medium 1 Low
- Durable: 18 Yes 0 No
- Intuitive: 18 Yes 0 No

Average response to the following questions: (1 means strongly Disagree with the statement, 5 means strongly Agree with the statement)

Overall, the user interface made sense.	3.83
The system responded in a timely manner.	3.44
The system displayed data clearly.	3.67
The system contained appropriate words and phrases.	3.33
I like having the ability to add new words and phrases.	3.00
I preferred using the touch screen to select words and phrases.	3.28
I preferred using speech to select words and phrases,	3.72
The system effectively conveyed the interrogator's needs/questions.	3.56
The system effectively conveyed the local national's response	3.22
The system was reliable and stable.	3.67
The menu options made sense.	4.06
The translated phrases made sense.	3.94
The pronunciation was clear.	3.94
I could overcome deficiencies in the translation by using my own knowledge of the original language.	2.17
The translation misled/confused the local nationals.	1.83
I was so confused I gave up.	1.67

Significant comments:

- 14 of 18 (80%) had 1 to 3 missed phrases during the test.
- Bulky
- Hard to find the correct phrase
- Had a lot of phrases
- Needs to be hands free
- Had to look at the screen all the time

- Easy to use

VRT: Of the 19 responses submitted, the following results are summarized:

- Usefulness: 10 High 7 Medium 2 Low
- Durable: 18 Yes 1 No
- Intuitive: 14 Yes 4 No

Average response to the following questions: (1 means strongly Disagree with the statement, 5 means strongly Agree with the statement)

Overall, the user interface made sense.	3.95
The system responded in a timely manner.	3.61
The system played data clearly.	4.39
The system contained appropriate material.	4.28
The system effectively conveyed the interrogator's needs/questions.	3.61
The system effectively conveyed the local national's response	3.06
The system was reliable and stable.	3.67
The menu options made sense.	3.83
Documentation clear and effective	4.06
The training video was a useful addition	1.39
The auxiliary amplification devices were well built and effective	3.61
The translated phrases made sense.	4.00
The pronunciation was clear.	3.83
I could overcome deficiencies in the translation by using my own knowledge of the original language.	2.17
The translation misled/confused the local nationals.	2.28
I was so confused I gave up.	1.67

Significant comments:

- 17 of 19 (89%) had 1 to 3 missed phrases during the test.
- Liked that it is a hands-free device.
- This is the best of the three.
- You have to memorize phrases
- Takes too long to train the voice.
- Inconsistent
- Phrases are limited

Interprete/Communicator: Of the 17 responses submitted, the following results are summarized:

- Usefulness: 9 High 7 Medium 1 Low
- Durable: 8 Yes 9 No
- Intuitive: 17 Yes 0 No

Average response to the following questions: (1 means strongly Disagree with the statement, 5 means strongly Agree with the statement)

Overall, the user interface made sense.	4.06
The system responded in a timely manner.	4.12
The system displayed data clearly.	4.41
The system contained appropriate words and phrases.	4.12
I like having the ability to add new words and phrases.	4.29
I preferred using the touch screen to select words and phrases.	3.47
I preferred using speech to select words and phrases,	3.18
The system effectively conveyed the interrogator's needs/questions.	3.65
The system effectively conveyed the local national's response	3.53
The system was reliable and stable.	3.41
The menu options made sense.	3.76
The system effectively conveyed the interrogator's needs/questions.	3.65
The translated phrases made sense.	4.06
The pronunciation was clear.	3.88
I could overcome deficiencies in the translation by using my own knowledge of the original language.	3.00
The translation misled/confused the local nationals.	1.71
I was so confused I gave up.	1.59

Significant comments:

- 9 of 17 (53%) had 1 to 3 missed phrases during the test.
- Not Tactical
- Not reliable
- No voice operation
- The word “weapon” didn’t translate well
- Needs to be more durable
- Liked that you can make your own phrases

- Programming was hard
- Too complicated
- Preferred using the stylus/touch screen to voice activation
- Unit froze on several occasions and had to be rebooted

6.2.3 Usage by Scenario

The demographic questionnaire additionally provided four separate scenarios and asked each student to rank the device they would prefer to use if they were in that scenario. The results are provided below.

Scenario 1. Checkpoint: The goal is to check all required documents at the checkpoint. The car is stopped at the gate to the military base and there is one person in the car – the driver. You have to make sure that the car is legal and safe to pass through the gate.

- Voice Response Translator: First Choice
- Phraselator: 2nd Choice
- Interpret/Communicator: Third Choice

2. Refugee screening: The goal is to gather personal information about a person, who is coming into the refugee camp.

- Voice Response Translator: Third Choice
- Phraselator: 2nd Choice
- Interpret/Communicator: First Choice

3. Injury evaluation, first aid: You are conducting screening of people coming to see the emergency doctor. You want to determine the severity of their injuries.

- Voice Response Translator: 3rd Choice
- Phraselator: 1st Choice
- Interpret/Communicator: 2nd Choice

4. Missing person: You are at the help desk where people can report missing relatives. There is a person in front of you whose relative is missing. You are gathering the description and personal information about the missing person.

- Voice Response Translator: 2nd Choice
- Phraselator: 1st Choice
- Interpret/Communicator: Third Choice

7.0 CONCLUSIONS

Each of the three machine language translation devices has unique features that could be useful in differing scenarios. The hands-free feature of the VRT may be particularly beneficial during checkpoint or patrolling actions. The Phraselator may be more suitable for refugee screening, injury evaluation and missing persons screening where hands free is not required. While the Interpret/Communicator shows great potential there were software/hardware interface problems which caused the device to freeze and subsequently had to be rebooted for it to operate. Additionally, the current speaker output of COTS IPAC Handhelds is poor, requiring an auxiliary speaker with wire attachment, which increases the footprint and adds a new requirement for batteries.

The three devices that were tested can be considered as complementary to each other. Because the Interpret/Communicator is not yet a mature capability, it is recommended that it not be used at this time. We encourage the continued development and testing for the capability for future use. It is recommended that a combination of the VRT and Phraselator be employed based on mission needs developed by the operational forces.

Appendix 1: Training Feedback Questionnaire

Language Translation Device Training Questionnaire

(For all users who attend training)

Name (Last, First, MI):	Date:
Exercise:	
Start Time of Training:	End Time of Training:

The purpose of this questionnaire is to assess the training you received on _____. Four response categories ranging from *Strongly Disagree* to *Strongly Agree* accompany each statement below. After reading each statement, put an *X* in the box that most closely matches your opinion of that aspect of the training. If you feel the statement is not applicable, mark the box on the far right labeled *Not Applicable (N/A)*. Your comments are very important. Please include any comments you have in the spaces provided below each statement.

	Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
1. After the training, I felt I understood how to use the device.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

2. Were the features adequately described during training.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

3. The training was logical and organized.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

4. The level of detail was appropriate.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

Language Translation Device Training Questionnaire
(For all users who attend training)

	Strongly Disagree	Disagree	Agree	Strongly Agree	N/A
5. Training was the appropriate length.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

6. Sufficient examples were covered during training.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

7. Hands-on activities during the training were helpful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

8. The training aids (e.g., handouts, slides) were helpful.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

9. Questions were addressed to my satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Comments: _____					

10. I would like to have more training in the following areas prior to using the device:					

Appendix 2: Checkpoint Scenario

Checkpoint Scenario

You are a sentry . The goal is to check all required documents at the checkpoint. The car is stopped at the gate to the military base and there is one person in the car – the driver. You have to make sure that the car is legal and safe to pass through the gate. Before you do so, identify who you are and that you are using a translation device that will help you communicate. You are to ask:

Do you speak English?

What is your name?

Do you need medical attention?

Do you know where enemy soldiers are located?

Do you know where weapons are located?

With whom would you like to meet?

Whether person has an appointment.

For identification papers.

For documents for the car.

Do you have any weapons?

Occupant to proceed to the vehicle search area.

Tell the occupant that you will be searching the vehicle.

Tell the occupant to get out of vehicle.

Tell the occupant to open doors, hood, trunk, and glove compartment.

Inform occupant that Vehicle Inspection is complete.

Actions:

You find that documents are in order, appointment is really scheduled, and car is safe to pass through the gate. You let them through.

You find that documents are in order, but there is no appointment and no one is waiting for this person. You don't let them through.

You find that documents are in order, appointment is really scheduled, but the driver has a pistol in the car. You take the weapon and let them through.

Arabic 1:

You are a native Arabic speaker and are in the car in front of the gate to the military base. Your name is Tarek Abdoulfatou. You have your passport for identification and a car registration. You don't have weapons or drugs in your car. You do not need medical attention and do not have any information on enemy soldiers or weapons. You have an appointment with Col. Smith at 1400. You would be staying on the base for 4 hours.

Arabic 2:

You are a native Arabic speaker and are in the car in front of the gate to the military base. Your name is Abdulah Rahman. You have your driver license for identification and a car registration. You don't have weapons or drugs in your car. You do not need medical attention and do not have any information on enemy soldiers or weapons. You say you have an appointment at 1400 with Col. Smith, but you really don't.

Arabic 3:

You are a native Arabic speaker and are in the car in front of the gate to the military base. Your name is Mona Bustani. You have your driver license for identification and a car registration. You do not need medical attention and do not have any information on enemy soldiers or weapons. You have a pistol but no drugs in your car. You have an appointment at 1400 with Col. Smith.

Appendix 3 : Phrasealator Questionnaire

Unit: _____ Years in Service: _____
Job Function: _____ Years in current job function: _____

Usefulness of translator: High Medium Low
Assisted in accomplishing mission: Somewhat
Not at all
Increased effectiveness

Scenario:

Force Protection Interrogation of Hostiles Interview of Friendly
Logistic Support Medical Assistance Other: _____

Brief Description of Scenario: _____

Operation:

Was the translator durable: YES NO
Was it intuitive/self-explanatory to use? YES NO
Did you receive user training? YES NO
If so, how much training? (days, hours, minutes) _____
Did you train the unit? YES NO

Accuracy:

Estimate percentage of missed phrases: _____
How many different people did you try this device on? _____
How many days have you been using this device? _____
Did local nationals understand the speech produced easily? YES NO

Phrases/scenarios consistently missed: _____

Recommendations:

Phrases/scenarios to be removed:

Phrases /scenarios to be added:

Languages to be added: _____

Usability

Please circle one choice in each row. 1 means “I strongly disagree with this statement” and 5 means “I strongly agree with this statement”.

	Strongly Disagree				Strongly Agree
	1	2	3	4	5
Overall, the user interface made sense.	1	2	3	4	5
The system responded in a timely manner.	1	2	3	4	5
The system displayed data clearly.	1	2	3	4	5

The system contained appropriate words and phrases.	1	2	3	4	5
I like having the ability to add new words and phrases.	1	2	3	4	5
I preferred using the touch screen to select words and phrases.	1	2	3	4	5
I preferred using speech to select words and phrases,	1	2	3	4	5
The system effectively conveyed the interrogator's needs/questions.	1	2	3	4	5
The system effectively conveyed the local national's response	1	2	3	4	5
The system was reliable and stable.	1	2	3	4	5
The menu options made sense.	1	2	3	4	5

General Translation

	Strongly Disagree		Strongly Agree
	1	3	5
The translated phrases made sense.	1	3	5
The pronunciation was clear.	1	3	5
I could overcome deficiencies in the translation by using my own knowledge of the original language.	1	3	5
The translation misled/confused the local nationals.	1	3	5
I was so confused I gave up.	1	3	5

Overall Experience

Please answer the following questions to the best of your knowledge. Use the back of the page if you need more space. Feel free to speak openly – your comments will be pooled with those of others, with no attribution to you personally. Remember: we are evaluating the system, not you. Thank you.

- 1) What did you like most about the device?

- 2) What did you like least?

- 3) What did you find easy to use?

- 4) What did you find hard to use?

5) What were the translation errors that seemed operationally important?

6) Was there something you wanted to do with the device but couldn't?

7) What would you change about this device?

8) Would you use this device as part of your daily job if it were available?

YES

NO

Why or Why not?

9) Additional Comments?

Appendix 4 : Voice Response Translator Questionnaire

Unit: _____ Years in Service: _____

Job Function: _____ Years in current job function: _____

Usefulness of translator: High Medium Low

Assisted in accomplishing mission: Somewhat Not at all Increased effectiveness

Scenario:

Force Protection Interrogation of Hostiles Interview of Friendly
Logistic Support Medical Assistance Other: _____

Brief Description of Scenario: _____

Operation:

Was the translator durable: YES NO
Was it intuitive/self-explanatory to use? YES NO
Did you receive user training? YES NO
If so, how much training? (days, hours, minutes) _____
Did you train the unit? YES NO
Did you need to recharge the unit? YES NO

Accuracy:

Estimate percentage of missed phrases: _____
How many different people did you try this device on? _____
How many days have you been using this device? _____
Did local nationals understand the speech produced easily? YES NO
Phrases/scenarios consistently missed: _____

Does thermal signature matter to you/your mission?

Recommendations:

Phrases/scenarios to be removed:

Phrases /scenarios to be added:

Languages to be added:

Usability

Please circle one choice in each row. 1 means "I strongly disagree with this statement" and 5 means "I strongly agree with this statement".

	Strongly Disagree				Strongly Agree
	1	2	3	4	5
Overall, the user interface made sense.	1	2	3	4	5
The system responded in a timely manner.	1	2	3	4	5
The system played data clearly.	1	2	3	4	5
The system contained appropriate material.	1	2	3	4	5
The system effectively conveyed the interrogator's needs/questions.	1	2	3	4	5
The system effectively conveyed the local national's response	1	2	3	4	5

The system was reliable and stable.	1	2	3	4	5
The menu options made sense.	1	2	3	4	5
Documentation clear and effective	1	2	3	4	5
The training video was a useful addition	1	2	3	4	5
The auxiliary amplification devices were well built and effective	1	2	3	4	5

General Translation

	Strongly Disagree		Strongly Agree	
	1	3	5	
The translated phrases made sense.	1	3	5	
The pronunciation was clear.	1	3	5	
I could overcome deficiencies in the translation by using my own knowledge of the original language.	1	3	5	
The translation misled/confused the local nationals.	1	3	5	
I was so confused I gave up.	1	3	5	

Overall Experience

Please answer the following questions to the best of your knowledge. Use the back of the page if you need more space. Feel free to speak openly – your comments will be pooled with those of others, with no attribution to you personally. Remember: we are evaluating the system, not you. Thank you.

- 10) What did you like most about the device?
- 11) What did you like least?
- 12) What did you find easy to use?
- 13) What did you find hard to use?
- 14) What were the translation errors that seemed operationally important?
- 15) Was there something you wanted to do with the device but couldn't?
- 16) What would you change about this device?
- 17) Would you use this device as part of your daily job if it were available?

YES

NO

Why or Why not?

18) Additional Comments?

Appendix 5 : Interpret Communicator Questionnaire

Unit: _____ Years in Service: _____

Job Function: _____ Years in current job function: _____

Usefulness of translator: High Medium Low

Assisted in accomplishing mission: Somewhat
Not at all
Increased effectiveness

Scenario:

Force Protection Interrogation of Hostiles Interview of Friendly
Logistic Support Medical Assistance Other: _____

Brief Description of Scenario: _____

Operation:

Was the translator durable: YES NO
Was it intuitive/self-explanatory to use? YES NO
Did you receive user training? YES NO
If so, how much training? (days, hours, minutes) _____
Did you train the unit? YES NO

Accuracy:

Estimate percentage of missed phrases: _____
How many different people did you try this device on? _____
How many days have you been using this device? _____
Did local nationals understand the speech produced easily? YES NO
Phrases/scenarios consistently missed: _____

Recommendations:

Phrases/scenarios to be removed:

Phrases /scenarios to be added:

Languages to be added:

Usability

Please circle one choice in each row. 1 means “I strongly disagree with this statement” and 5 means “I strongly agree with this statement”.

	Strongly Disagree				Strongly Agree
	1	2	3	4	5
Overall, the user interface made sense.	1	2	3	4	5
The system responded in a timely manner.	1	2	3	4	5
The system displayed data clearly.	1	2	3	4	5
The system contained appropriate words and phrases.	1	2	3	4	5
I like having the ability to add new words and phrases.	1	2	3	4	5
I preferred using the touch screen to select words and phrases.	1	2	3	4	5
I preferred using speech to select words and phrases,	1	2	3	4	5
The system effectively conveyed the interrogator's needs/questions.	1	2	3	4	5

The system effectively conveyed the local national's response	1	2	3	4	5
The system was reliable and stable.	1	2	3	4	5
The menu options made sense.	1	2	3	4	5

General Translation

	Strongly Disagree		Strongly Agree
	1	3	5
The translated phrases made sense.	1	3	5
The pronunciation was clear.	1	3	5
I could overcome deficiencies in the translation by using my own knowledge of the original language.	1	3	5
The translation misled/confused the local nationals.	1	3	5
I was so confused I gave up.	1	3	5

Overall Experience

Please answer the following questions to the best of your knowledge. Use the back of the page if you need more space. Feel free to speak openly – your comments will be pooled with those of others, with no attribution to you personally. Remember: we are evaluating the system, not you. Thank you.

19) What did you like most about the device?

20) What did you like least?

21) What did you find easy to use?

22) What did you find hard to use?

23) What were the translation errors that seemed operationally important?

24) Was there something you wanted to do with the device but couldn't?

25) What would you change about this device?

26) Would you use this device as part of your daily job if it were available?

YES

NO

Why or Why not?

27) Additional Comments?

Appendix 6 : Demographic Questionnaire

Name: _____ Date: _____

Rank: _____ Unit: _____

Unit Phone: (_____) _____ E-mail: _____

Military Specialty: _____
(code and name)

Time in Specialty: _____ Duty Title: _____
(years and months)

Are you a linguist?

Yes
No

level

Languages

Proficiency

_____	_____
_____	_____
_____	_____

Briefly describe your role during this event.

Describe any previous experience you have had with any foreign language translation technologies.

Which system would you want to have in the following scenarios? Rank order them 1, 2 or 3.

1. Checkpoint: The goal is to check all required documents at the checkpoint. The car is stopped at the gate to the military base and there is one person in the car – the driver. You have to make sure that the car is legal and safe to pass through the gate.

Voice Response Translator_____ Phraselator_____
Communicator_____

2. Refugee screening: The goal is to gather personal information about a person, who is coming into the refugee camp.

Voice Response Translator_____ Phraselator_____
Communicator_____

3. Injury evaluation, first aid: You are conducting screening of people coming to see the emergency doctor. You want to determine the severity of their injuries.

Voice Response Translator_____ Phraselator_____
Communicator_____

4. Missing person: You are at the help desk where people can report missing relatives. There is a person in front of you whose relative is missing. You are gathering the description and personal information about the missing person.

Voice Response Translator_____ Phraselator_____
Communicator_____